



SocBiz

Winter Analytics

Team Members

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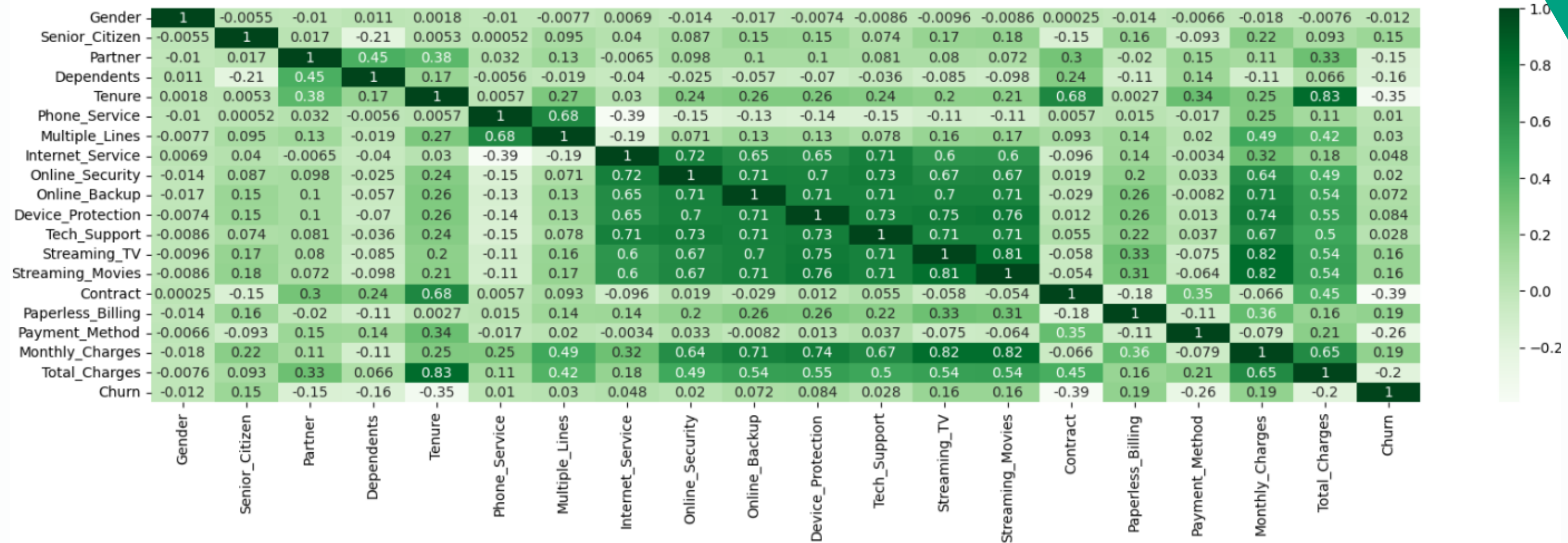


Executive Summary

- Customers with month-to-month contracts and Fiber Optics internet service exhibit higher churn rates, indicating potential dissatisfaction. To address this, implement targeted retention strategies, improve service quality, and explore incentives for longer-term contracts.
- Monthly charges significantly impact churn, with higher charges correlating with increased churn rates. Optimize pricing strategies for high monthly charge segments.
- New customers (0-10 months tenure) are more prone to churn. Implement targeted onboarding processes and retention strategies during the initial months.
- Customers with a partner exhibit a lower churn rate compared to those without partners. Promote partner bundles and tailor communication for customers without partners.
- Since we have to predict binary outcome we are using classification models to predict the churn of customers.
- Logistic Regression led with the highest accuracy at 79%, followed by K-Nearest Neighbors (78%), Support Vector Machine (74%), and Naive Bayes (72%).
- Logistic Regression achieves high precision (83%) and recall (90%) for predicting no-churn instances, indicating reliable identification of customers who will not churn.
- For predicting churn instances, Logistic Regression shows a reasonable precision of 62%, but the recall is comparatively lower at 46%, suggesting an opportunity for improvement in capturing more actual churn cases.
- The F1-scores, balancing precision and recall, are 0.86 for no-churn and 0.53 for churn instances. The overall accuracy of the model is 79%, demonstrating its general capability to correctly classify instances.

Correlation Matrix:-

To get correlation between different numerical features



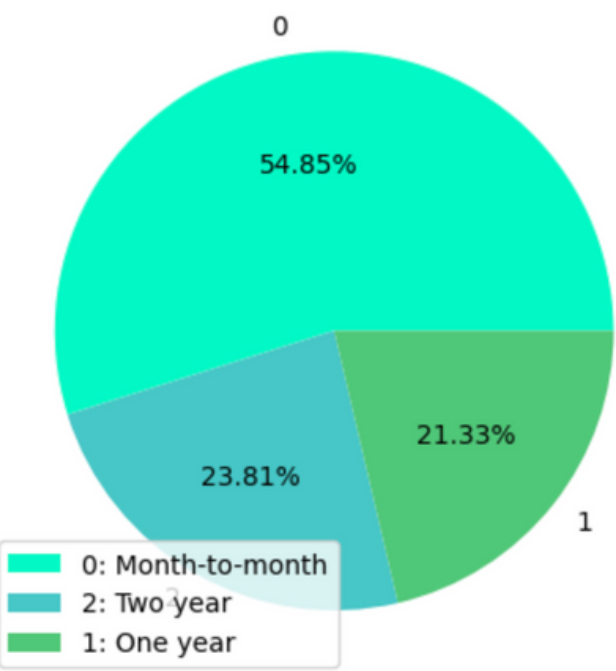
Conclusion from heat map:-

- The values in the heatmap signifies the correlation between two entities, 1 represent total correlation whereas 0 represent no relation at all.
- Negative values represent that if one value increases other decreases.
- As we can see in the map , entities in the middle have maximum relations.
- For eg, people who has more tenure has compartivaly more total charges due to the obvious facts that more tenure of service means more charges.

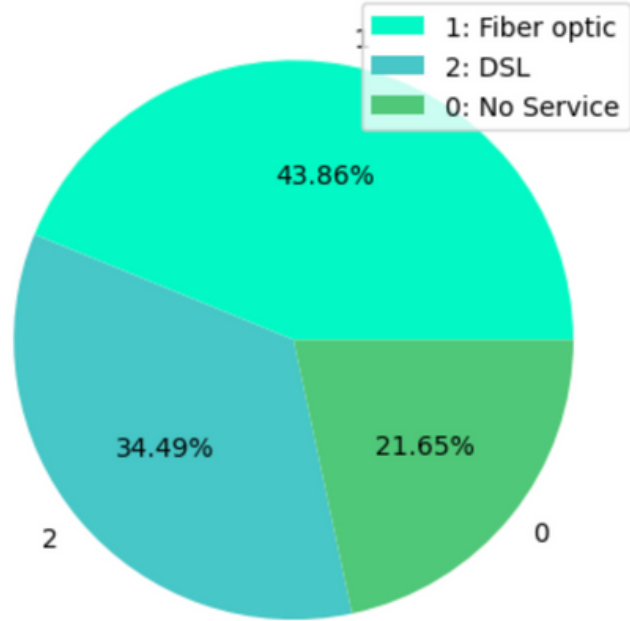
Customer Distribution :-



Number of Customers having different contracts



Number of Customers Availing Internet Services



Conclusions

Internet Service Distribution:

- The majority of customers (43.86%) are using Fiber Optics for their internet service, indicating a significant demand for high-speed internet.
- A notable portion (21.65%) of customers does not use internet services at all, which could be an interesting segment to explore further.

Contract Distribution:

- More than half of the customers (54.85%) prefer a monthly contract, suggesting a preference for flexibility.
- A substantial percentage (23.81%) opt for a two-year contract, indicating a desire for a long-term commitment.
- The remaining customers have a one-year contract.

Potential Solutions

Internet Service:

- Improve Fiber Optics service quality.
- Explore options for non-internet users.

Contract Management:

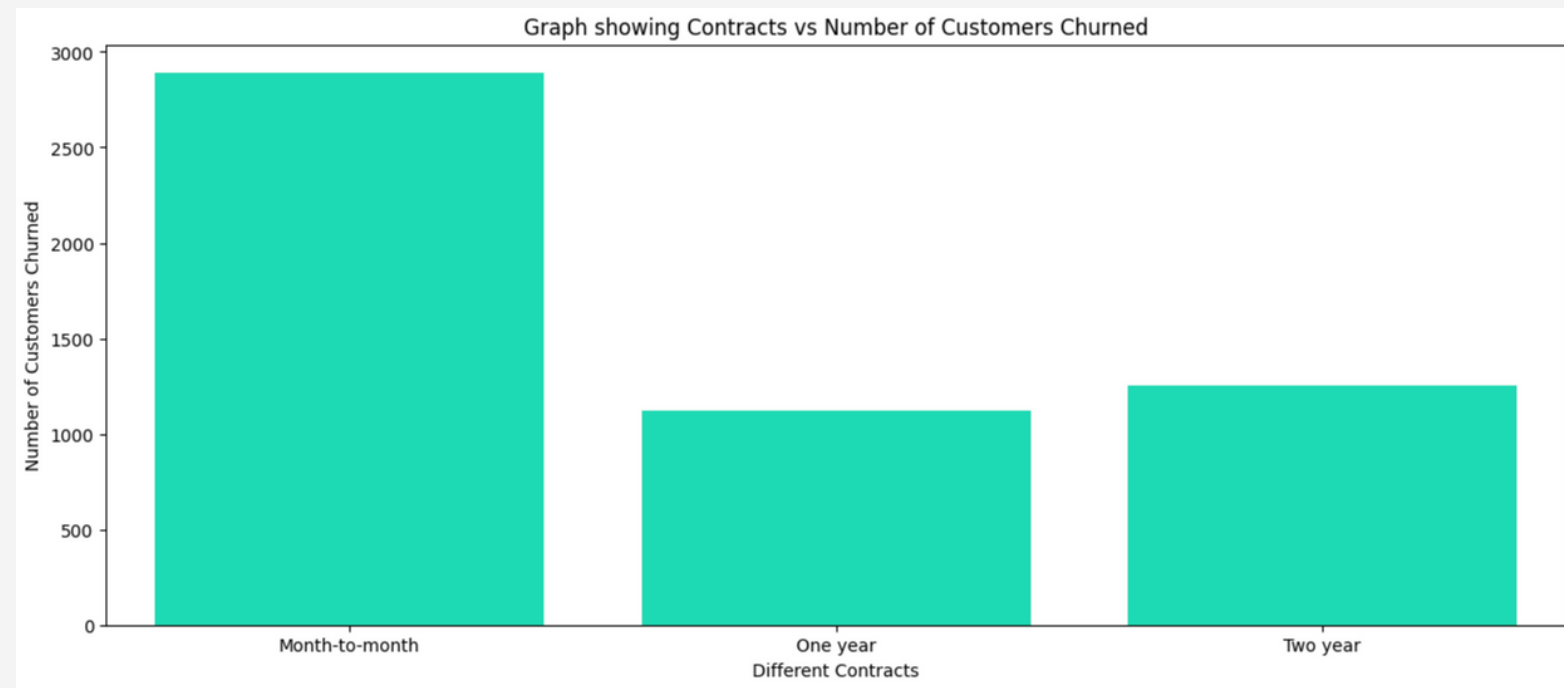
- Offer incentives for longer-term contracts.
- Understand reasons behind two-year contract preference.

Customer Engagement:

- Implement customer feedback mechanisms.
- Enhance communication on services and benefits

Graphs:-

How many customers churned having different contracts and internet services



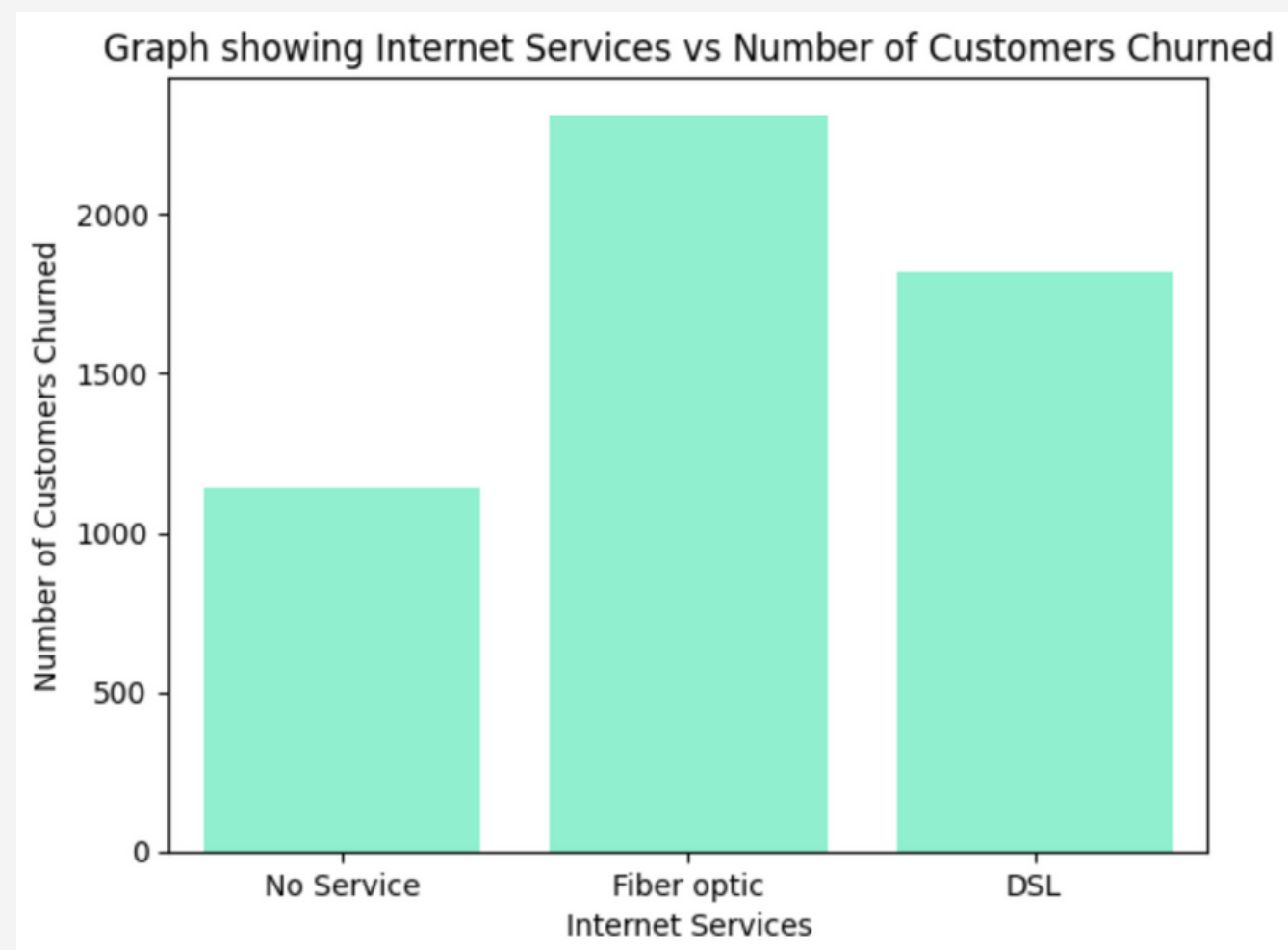
Conclusions

Customer Contract vs. Churn:

- Churn is highest among customers with month-to-month contracts, indicating a potential issue with this contract type.

Internet Service vs. Churn:

- Churn is highest among Fiber Optics users, suggesting dissatisfaction or specific challenges related to this service.



Suggestions:

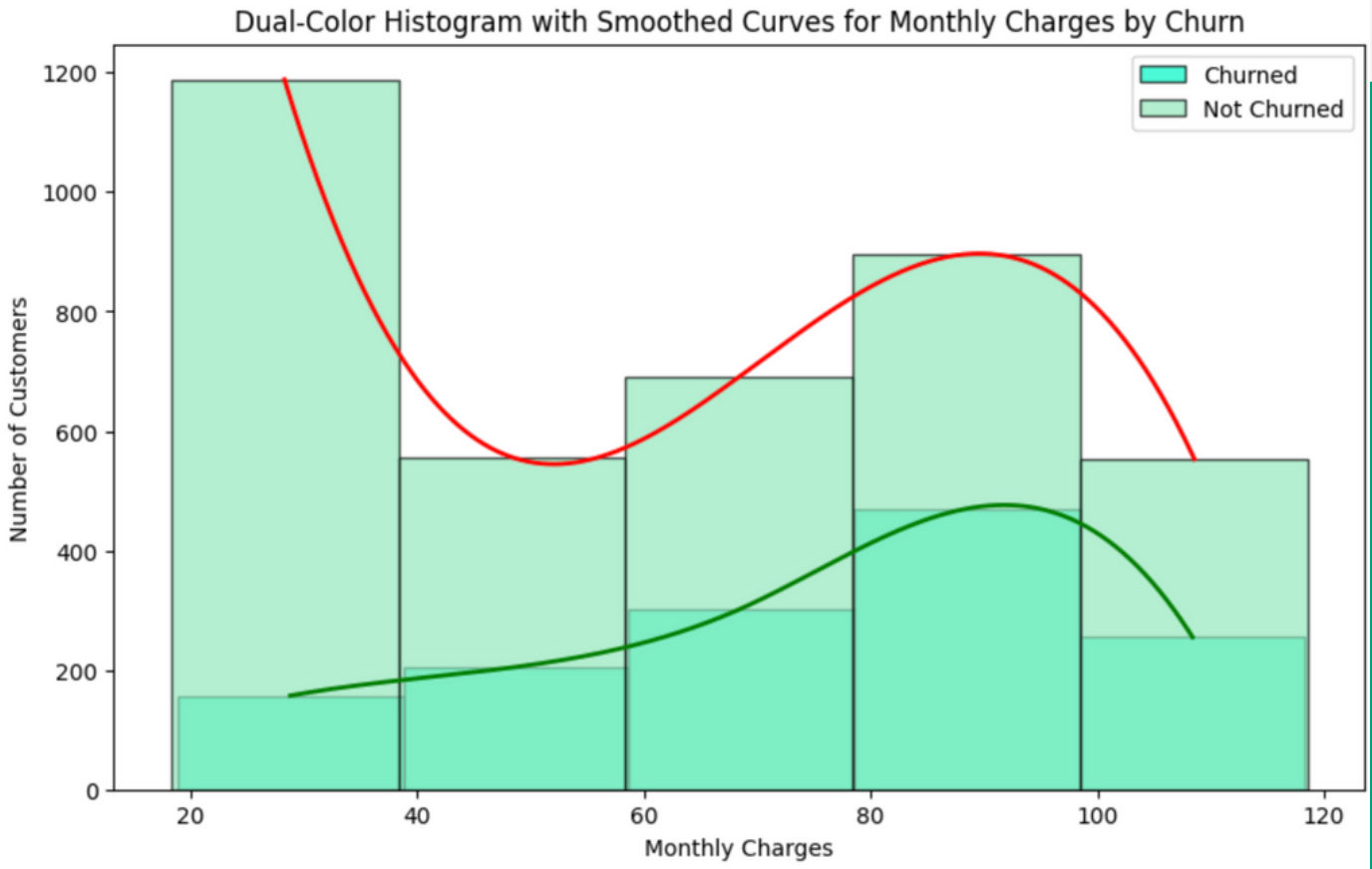
Month-to-Month Contracts:

- Incentivize customers to switch to longer-term contracts.
- Identify and address pain points causing dissatisfaction with month-to-month plans.

Fiber Optics Service:

- Investigate and resolve issues with Fiber Optics service.
- Consider offering promotions or upgrades to retain Fiber Optics customers.
- Focus on improving the customer experience for month-to-month contracts and Fiber Optics users to mitigate churn in these segments.

Finding how monthly charges and total charges play the role in customers getting churned



Conclusion

- Maximum customers are paying monthly charge of about 20-40 rupees and around 15% customers are churning in this region.
- Between 60-80, maximum customer churn rate is observed of about 50%.

Suggestions:

Pricing Strategy:

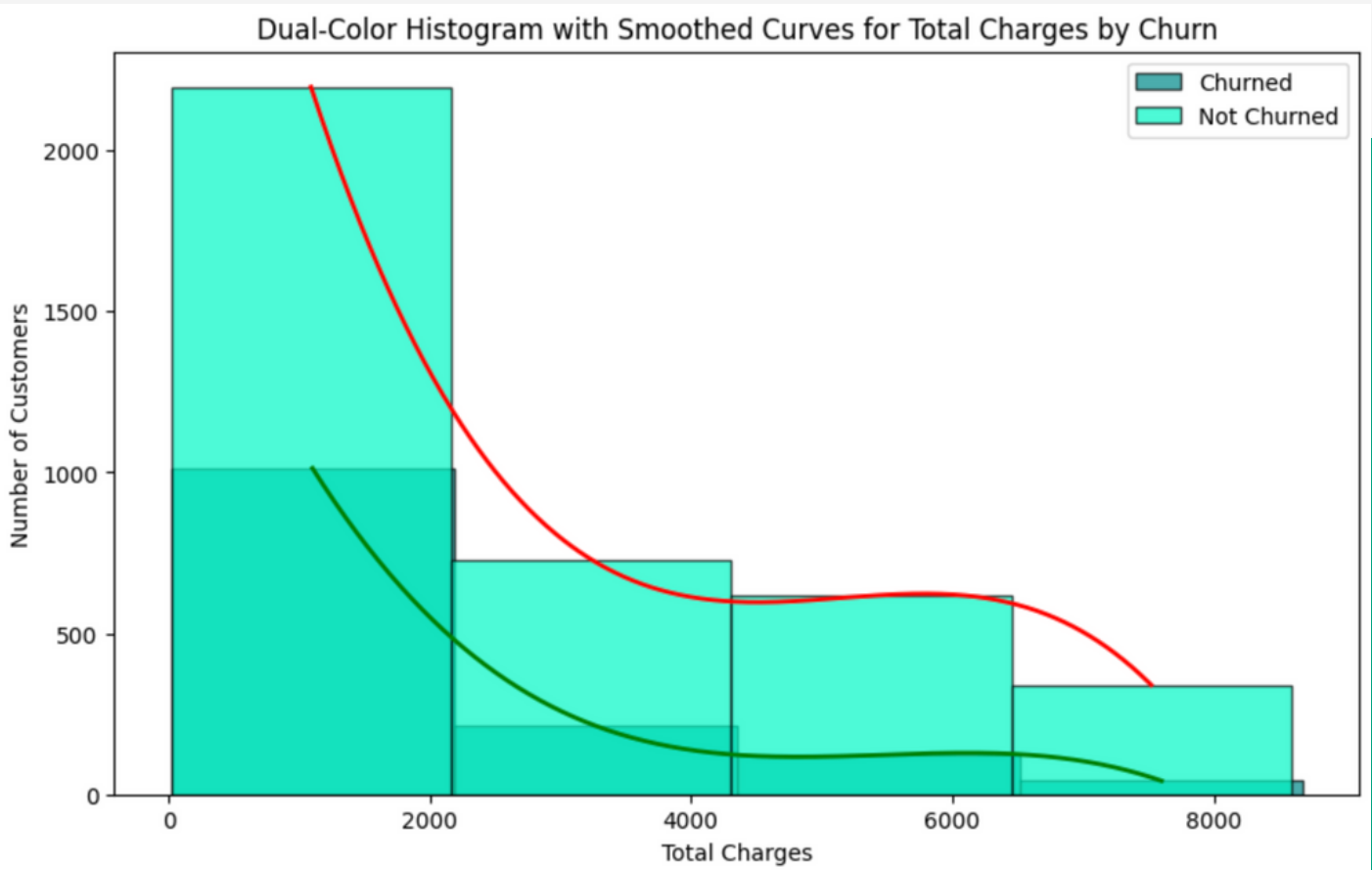
- Consider offering promotions or discounts in the 60-80 rupees range to reduce churn.
- Evaluate the value provided at the 20-40 rupees range and ensure customer expectations are met.

Customer Retention:

- Implement targeted retention strategies for customers in the identified churn-prone charge ranges.
- Analyze feedback to understand reasons for churn and address them accordingly.

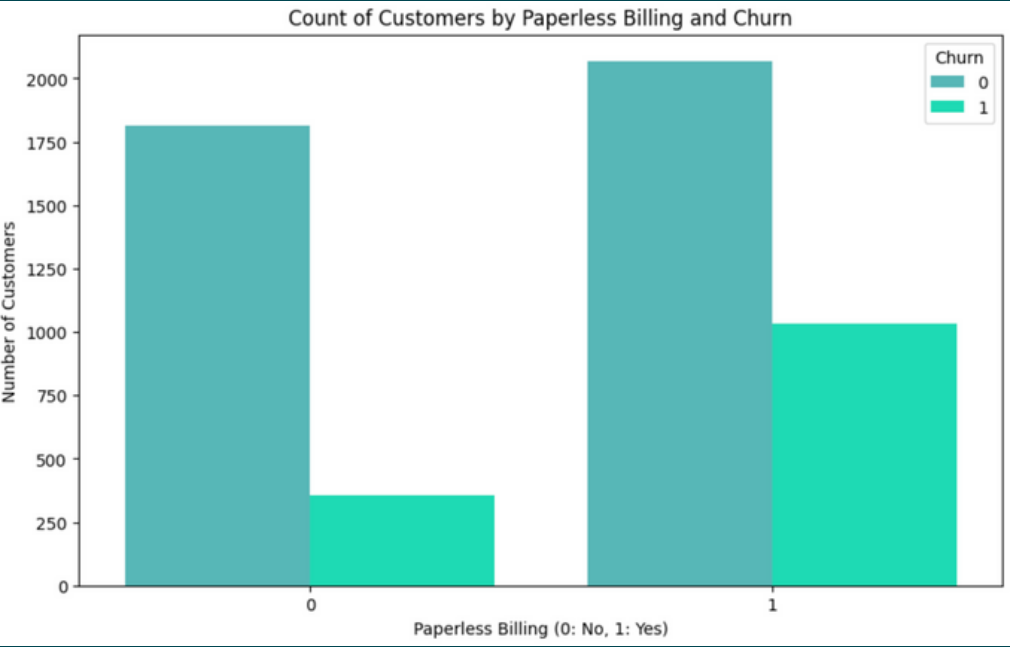
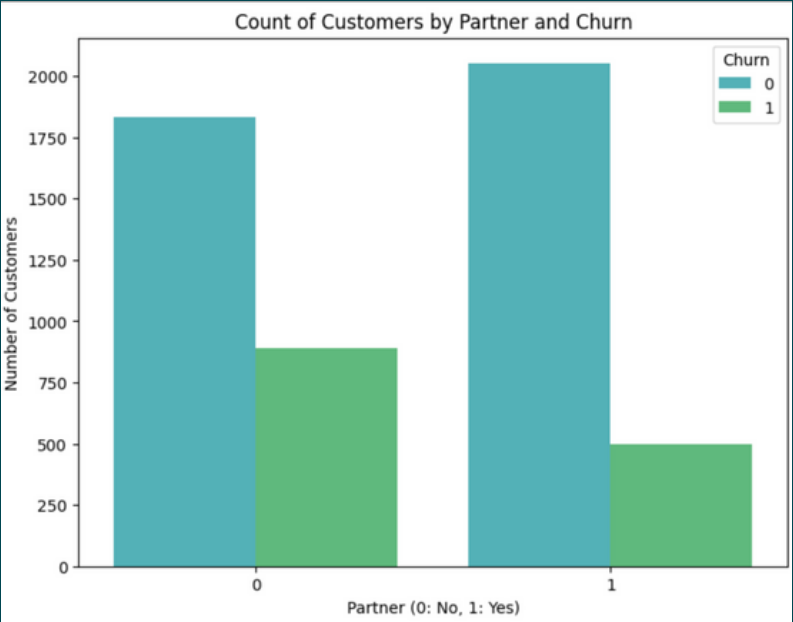
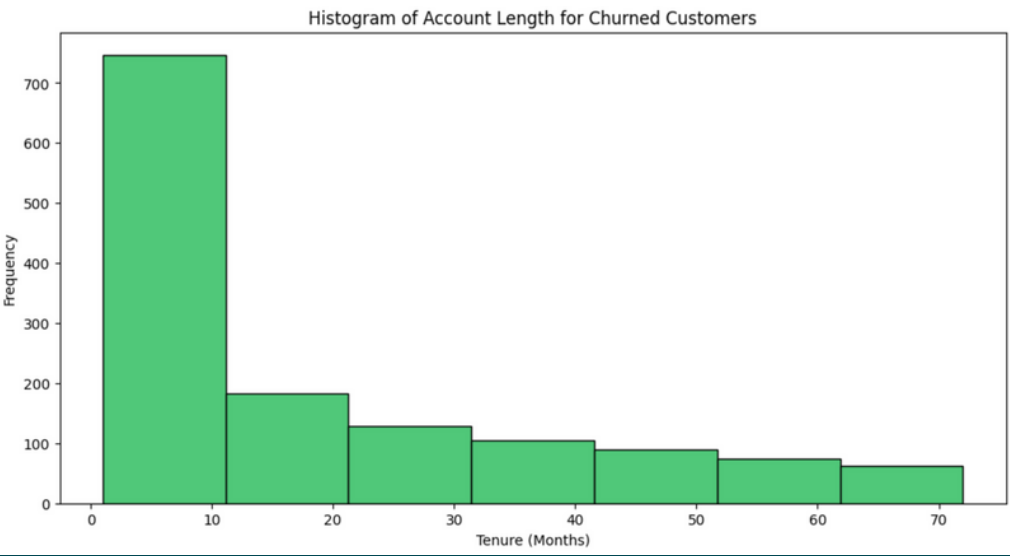
Segmented Retention Strategies:

- Implement targeted retention efforts for customers with total charges in the 0-2000 rupees range.
- Consider loyalty programs or discounts to retain customers in this segment.



Conclusion

- Maximum customers are paying total charge of about 0-2000 rupees and around 40% customers are churning in this region.
- This %churn is decreasing as total charge decreases.



Conclusions:

Tenure vs. Churn Histogram:

- Churn is highest among customers with tenure between 0-10 months.
- Churn decreases as tenure increases beyond the initial months.

Effect of Partner on Churn:

- Customers with a partner have a lower churn rate of 20%.
- Customers without a partner have a higher churn rate of approximately 31%.

Suggestions:

Customer Loyalty Programs:

- Introduce loyalty programs to reward long-term customers.
- Emphasize customer retention strategies for the initial tenure period.

Promote Partner Bundles:

- Encourage marketing of partner bundles or family plans.
- Highlight the benefits of services for couples to reduce churn

Insights from the models

MODEL
ACCURACY

CLASSIFICATION
REPORT

kNN

78%

	precision	recall	f1-score	support
0	0.83	0.88	0.85	782
1	0.59	0.47	0.52	273
accuracy			0.78	1055
macro avg	0.71	0.68	0.69	1055
weighted avg	0.76	0.78	0.77	1055

Logistic Regression

79%

	precision	recall	f1-score	support
0	0.83	0.90	0.86	782
1	0.62	0.46	0.53	273
accuracy			0.79	1055
macro avg	0.73	0.68	0.70	1055
weighted avg	0.77	0.79	0.78	1055

SVM

74%

	precision	recall	f1-score	support
0	0.74	1.00	0.85	782
1	0.00	0.00	0.00	273
accuracy			0.74	1055
macro avg	0.37	0.50	0.43	1055
weighted avg	0.55	0.74	0.63	1055

Naive bayes

72%

	precision	recall	f1-score	support
0	0.90	0.70	0.79	782
1	0.47	0.79	0.59	273
accuracy			0.72	1055
macro avg	0.69	0.74	0.69	1055
weighted avg	0.79	0.72	0.74	1055

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THANK
YOU!